



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,117	08/27/2003	Ole Henrik Waagaard	WEAT/0347	5878
36735	7590	11/23/2005	EXAMINER	
PATTERSON & SHERIDAN, L.L.P. 3040 POST OAK BOULEVARD, SUITE 1500 HOUSTON, TX 77056				CONNOLLY, PATRICK J
		ART UNIT		PAPER NUMBER
				2877

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	<i>[Signature]</i>
	10/650,117	WAAGAARD ET AL.	
	Examiner	Art Unit	
	Patrick J. Connolly	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 07 November 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-49 and 62-64 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 14-49, 62 and 64 is/are allowed.
- 6) Claim(s) 1-13 and 63 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 27 August 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 01.24.2005
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

Paragraph [0001] is missing U.S. Patent Application numbers.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

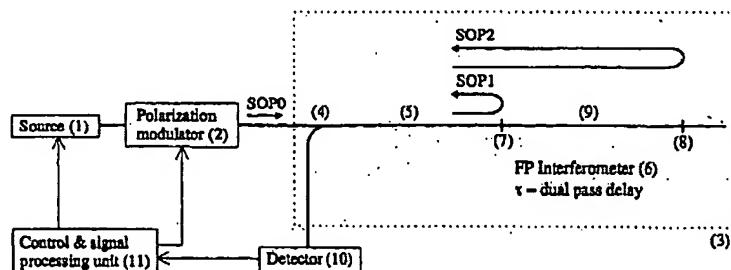
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-13 and 63 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by

WIPO Publication WO 00/79335 A1 to Ronneklev (hereafter Ronneklev).

As to claims 1 and 63 Ronneklev discloses an interferometric system and method for determining sensor response in said system including (see Figure 1 below):



generating an interrogation signal for an interferometric sensor array (7,8), where the interrogation signal comprises a plurality of pulses (see also page 5 and page 12);
switching a polarization of each pulse in the plurality of pulses, where the polarization is switched between pulses (2 above, see page 12);

receiving a responsive signal from at least one sensor within the interferometric sensor array comprising at least four independent signal components carrying information about a system response matrix associated with each of the at least one sensors (see pages 8 and 9; and extracting information from the at least four independent signal components (see pages 8 and 9, S1, S2, S3, S4) concerning a Jones Matrix of a sensor.

As to claim 2, Ronneklev discloses pulse pairs and switching the polarization between the pairs (see page 13).

As to claim 3, Ronneklev discloses measuring a common mode phase response (see page 10).

As to claim 4, Ronneklev discloses determining a differential birefringent phase response (see page 8, lines 15-19).

As to claim 5, Ronneklev discloses a source with varying optical frequency (see Figure 4).

As to claim 6, Ronneklev discloses limiting the separation between the pulses to being less than the interferometric delay (see page 13).

As to claims 7 and 9, Ronneklev discloses switching the polarization between orthogonal states (see page 7, bottom paragraph).

As to claim 8, Ronneklev discloses unique combinations of polarization states (see page 8, discussion of eigen-polarization states).

As to claims 10 and 11, Ronneklev discloses time varying and independent phase modulation of the signals (see page 7).

As to claim 12, Ronneklev discloses filtering the reflected signal to produce separate signals (see page 12, main paragraph).

As to claim 13, Ronneklev discloses forming four separable signal components (see page 9).

Allowable Subject Matter

Claims 14-49, 62 and 64 allowed.

The following is an examiner's statement of reasons for allowance:

As to claims 14, 43 and 64, the prior art of record, taken alone or in combination, fails to disclose or render obvious an apparatus or method for determining sensor response in an interferometric sensor system including: means for producing an interrogation signal for applying to the interferometric sensor array, wherein the interrogation signal defines at least four independent Stokes vectors, and means for computing a Jones matrix of at least one sensor in said array in response to a responsive signal from the array, in combination with the rest of the limitations of claims 14, 43 and 64.

As to claims 47 and 62, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method or apparatus for determining sensor response in an interferometric sensor array including: a polarization diversity receiver for receiving a responsive signal from the interferometric sensor array and separating the responsive signal into a plurality of polarization components; and a processor for extracting from the plurality of polarization components information concerning a Jones matrix of at least one sensor, in combination with the rest of the limitations of claims 47 and 62.

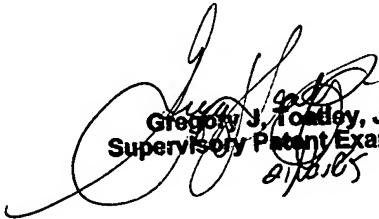
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Connolly whose telephone number is 571.272.2412. The examiner can normally be reached on 9:00 am - 7:00 pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on 571.272.2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pjc pjc
11.18.2005


Gregory J. Toatley, Jr.
Supervisory Patent Examiner
11/18/05